

REMARKS/ARGUMENTS

1.) Claim Amendments

The Applicant has amended claims 1-4, 6, 9-13 and 15. Applicant respectfully submits no new matter has been added. Accordingly, claims 1-16 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Examiner Objections - Claims

Claims 4-16 were objected to because of informalities. The Applicant has amended the claims as suggested by the Examiner in order to correct the informalities. The Examiner's consideration of the amended claims is respectfully requested.

3.) Claim Rejections – 35 U.S.C. § 102(b)

Claims 1-3 stand rejected under 35 U.S.C. 102(b) as being anticipated by Sukkar U.S. Patent No. 5,613,037 (hereinafter, Sukkar). Applicant has amended the claims to better distinguish the present invention from Sukkar. Sukkar discloses a digit string recognizer/rejection system that processes spoken words through an HMM recognizer to determine a string of candidate digits, a filler model for each digit in the digit string, and other information. Next, a weighted sum is generated for each digit in the string and for a filler model for each digit in the string. A confidence score is generated for each digit by subtracting the filler weighted sum from the digit weighted sum. The confidence score for each digit is then compared to a threshold and, if the confidence score for any of the digits is less than the threshold, the entire digit string is rejected. If the confidence scores for all of the digits in the digit string are equal to or greater than the threshold, then the candidate digit string is accepted as a digit string.

According to the Examiner, Sukkar thus can be equated to the present invention that includes a method for recognizing a keyword from a spoken utterance, with at least one keyword model and a plurality of garbage models, wherein a part of the spoken utterance is assessed as the keyword to be recognized, if that part matches best either to the keyword model or to a garbage sequence model, and wherein the garbage

sequence model is a series of consecutive garbage models from that plurality of garbage models. The Examiner refers to column 2, lines 47-52, col. 5, lines 10-14 and lines 25-27, and also Figs. 3, and 4. These provisions are as follows:

This problem is solved and a technical advance is achieved in the art by a system and method that recognizes digit strings with a high degree of reliability by processing the spoken words (utterances) through an HMM recognizer to determine a string of candidate digits and other related information.

In HMM recognizer 308, each HMM model (digit and filler) is modeled as a continuous density left-to-right HMM which uses eight to ten states, depending on the specific word model, with fifteen Gaussian mixture components per state.

The corresponding HMM word and state segmentation information is obtained for use in the rejection post-processor, as will be discussed below.

HMM refers to a Hidden Markov Model speech recognizer. According to Sukkar, the Hidden Markov Model speech recognizer develops a candidate word by determining a best match between the spectral content of the input speech and the predetermined word models of its vocabulary set. HMM recognizers also determine segmentation information (i.e., the beginning and end of the candidate word) and a likelihood score that represents whether the candidate word is more or less probable. For many applications, this likelihood score can be compared to a threshold to determine whether the candidate word is present in the input speech, or whether to reject it. According to the Examiner, the keyword model is equated to the digit model and the garbage sequence model is equated to the HMM filler model. More specifically, according to the Examiner, the plurality of garbage models is equated to the HMM filler model.

As for claim 2, the Examiner states that Sukkar teaches the method according to claim 1 wherein the garbage sequence model is determined by comparing a keyword utterance, which represents the keyword to be recognized, with the plurality of garbage models and: detecting the series of consecutive garbage models from that plurality of garbage models, which match best to the keyword to be recognized.

As for claim 3, the Examiner states that Sukkar teaches the method according to claim 1 or 2, wherein the determined garbage sequence model is privileged against any path through the plurality of garbage models.

However, in contrast to Sukkar, the present invention is looking for keywords that might appear to be noise/non-meaningful utterances (garbage), due to bad acoustics, etc. and hence tries to match the utterance through a plurality of garbage models. Hence, the Sukkar model of speech recognition is not equivalent to the present invention.

4.) Prior Art Not Relied Upon

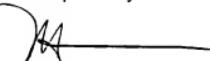
In paragraph 5 on page 4 of the Office Action, the Examiner stated that the prior art made of record and not relied upon is considered pertinent to the Applicant's disclosure. None of the cited references alone disclose, nor in combination suggest, the present invention.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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